

Remarks

Applicants respectfully request reconsideration of the present U.S. Patent application as amended herein. Claims 1, 6, 11 and 16 have been amended. No claims have been added or canceled. Thus, claims 1-20 are pending.

CLAIM REJECTIONS – 35 U.S.C. § 103(a)

Claims 1-3, 5-8, 10-13, 15-18 and 20 were rejected as being unpatentable over U.S. Patent Publication No. 2003/0147476 of Ma, et al. (*Ma*) in view of U.S. Patent Publication No. 2001/0031014 of Subramanian, et al. (*Subramanian*). For at least the reasons set forth below, Applicants submit that claims 1-3, 5-8, 10-13, 15-18 and 20 are not rendered obvious by *Ma* and *Subramanian*.

Claim 1 recites:

receiving channel state information of a communication channel
comprising a channel transfer function estimate;
rescaling subcarrier power of a signal based on the channel state
information; and
adjusting a modulation rate based on the channel state information.

Thus, Applicants claim use of a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate. Independent claims 6, 11 and 16 similarly recite use of a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate.

Applicants agree with the Office Action that *Ma* does not disclose adjusting modulation rate based on channel state information. See Office Action at paragraph 2. *Subramanian* is cited to teach adjusting modulation rate based on channel state

information. See Office Action at paragraph 2. However, *Subramanian* discloses use of signal to noise ratio. See paragraph 0017. Therefore, neither *Ma* nor *Subramanian* alone or in combination can teach or suggest the invention as claimed in claims 1, 6, 11 and 16.

Claims 2, 3 and 5 depend from claim 1. Claims 7, 8 and 10 depend from claim 6. Claims 12, 13 and 15 depend from claim 11. Claims 17, 18 and 20 depend from claim 16. Because dependent claims include the limitations of the claims from which they depend, Applicants submit that claims 2, 3, 5, 7, 8, 10, 12, 13, 15, 17, 18 and 20 are not rendered obvious by *Ma* and *Subramanian* for at least the reasons set forth above.

Claims 4, 9, 14 and 19 were rejected as being unpatentable over *Ma* and *Subramanian* in view of U.S. Patent Publication No. 2003/0043929 of *Sampath* (*Sampath*). For at least the reasons set forth below, Applicants submit that claims 4, 9, 14 and 19 are not rendered obvious by *Ma*, *Subramanian* and *Sampath*.

Claims 4, 9, 14 and 19 depend from independent claims discussed above. As discussed above, no combination of *Ma* and *Subramanian* can teach or suggest use of a channel transfer function estimate for rescaling of subcarrier power and adjusting a modulation rate.

Sampath is cited to teach trellis coding because neither *Ma* nor *Subramanian* disclose trellis coding. Whether or not *Sampath* is properly combined with *Ma* and *Subramanian*, *Sampath* does not cure the deficiencies of *Ma* and *Subramanian* set forth above. Therefore, no combination of *Ma*, *Subramanian* and *Sampath* can teach or suggest the invention as claimed in claims 4, 9, 14 and 19.

CONCLUSION

For at least the foregoing reasons, Applicants submit that the rejections have been overcome. Therefore, claims 1-20 are in condition for allowance and such action is earnestly solicited. The Examiner is respectfully requested to contact the undersigned by telephone if such contact would further the examination of the present application. Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,
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